

CLAIMS

1. A laser target comprising:
 - a shank having an integral first wedge converging from a step to a distal end of said wedge;
 - a complementary second wedge fixedly mounted on said step and converging with said first wedge;
 - said first and second wedges having respective oval target apertures aligned with each other transversely therethrough;
 - said first and second wedges further including respective seats adjoining each other for supporting a target sheet between said target apertures, with said wedges defining a triangle terminating in an apex at distal ends of said wedges; and
 - said first and second wedges further including respective external faces in which said target apertures are mounted flush.
2. A target according to claim 1 wherein said aligned target apertures decrease in depth between said shank step and said apex of said wedges.
3. A target according to claim 2 wherein seats include respective recesses aligned with each other around said target apertures to define a pocket for receiving said target sheet.
4. A target according to claim 3 wherein said recesses have equal depths for aligning the mating plane of two target sheets with the mating plane of said first and second wedges.
5. A target according to claim 4 further comprising a base plate fixedly joined to a proximal end of said shank.
6. A target according to claim 5 wherein said oval target apertures include corresponding major axes being normal with said shank step.

7. A target according to claim 16 wherein each of said faces includes a respective crosshair around said target aperture for centering a laser beam therein.

8. A target according to claim 7 wherein said second wedge is removably joined to said first wedge by a pair of bolts extending therethrough between said target aperture and said shank.

9. A target according to claim 8 further comprising a pair of said target sheets mounted in said recesses between said first and second wedges.

10. A target according to claim 9 in a combination apparatus with a computer numerically controlled multiaxis manipulator having a supporting bracket at a distal end thereof fixedly joined to said target base plate.

11. A laser target comprising:

a shank having an integral first wedge converging from a step to a distal end of said wedge;

a complementary second wedge fixedly mounted on said step and converging with said first wedge; and

said first and second wedges having respective target apertures aligned with each other transversely therethrough.

12. A target according to claim 11 wherein said first and second wedges further include respective seats adjoining each other for supporting a target sheet between said target apertures, with said wedges defining a triangle terminating in an apex at distal ends of said wedges.

13. A target according to claim 12 wherein said first and second wedges further include respective external faces in which said target apertures are mounted flush.

14. A target according to claim 13 wherein said target apertures are oval with corresponding major axes being normal with said shank step.
15. A target according to claim 13 wherein seats include respective recesses aligned with each other around said target apertures to define a pocket for receiving said target sheet.
16. A target according to claim 15 wherein said recesses have equal depths for aligning the mating plane of two target sheets with the mating plane of said first and second wedges.
17. A target according to claim 13 wherein said second wedge is removably joined to said first wedge by a bolt extending therethrough between said target aperture and said shank.
18. A target according to claim 13 wherein each of said faces includes a respective crosshair around said target aperture for centering a laser beam therein.
19. A target according to claim 13 further comprising a base plate fixedly joined to a proximal end of said shank.
20. A target according to claim 19 in a combination apparatus with a computer numerically controlled multiaxis manipulator having a supporting bracket at a distal end thereof fixedly joined to said target base plate.
21. An apparatus according to claim 20 further comprising:
 - a laser;
 - adjustable optics disposed in optical alignment with said laser for directing two converging laser beams therefrom; and
 - said manipulator being programmed for positioning said target apertures in alignment with respective ones of said two laser beams.
22. A method of using said apparatus according to claim 21 comprising:

assembling said second wedge to said first wedge with said target sheet therebetween; carrying said target on said manipulator to position said target apertures in alignment with said laser beams;

operating said laser to emit said laser beams to mark said target sheet within said target apertures;

measuring any offset in marking of said target sheet between said target apertures; and adjusting alignment of said laser beams to reduce said offset thereof between said target apertures.

23. A method according to claim 22 wherein said target is aligned with said laser beams to effect elliptical projections thereof inside said target apertures, and said target apertures are oval for surrounding said elliptical projections, with major axes thereof being coextensive.

24. A method according to claim 23 further comprising:

substituting a workpiece in said manipulator for said target following alignment of said laser beams; and

operating said laser and manipulator for laser shock peening an external surface of said workpiece.